SEQUENCE LISTING

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<120> ANTIBODIES FOR DETECTING MICROORGANISMS

<130> ASAHI-2-PC-1

<140> 09/744,910
<141> 2001-05-17

<150> PCT/JP99/04122
<151> 1999-07-30

<150> JP 10/230204
<151> 1998-07-31

<160> 22

<170> PatentIn Ver. 2.1

<210> 1
<211> 369
<212> DNA
<213> Haemophilus influenzae

<220>
<221> CDS
<222> (1)..(369)

<400> 1

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atg tca tta act aac gaa caa atc att gaa gcg att gct tca aaa act   48
Met Ser Leu Thr Asn Glu Gln Ile Ile Glu Ala Ile Ala Ser Lys Thr
  1               5                  10                  15

gta act gaa atc gtt gaa tta atc gca gcg atg gaa gaa aaa ttc ggt   96
Val Thr Glu Ile Val Glu Leu Ile Ala Ala Met Glu Glu Lys Phe Gly
             20                  25                  30

gtt tca gca gcg gca gca gta gca gca gct cca gca gca ggc ggt gca   144
Val Ser Ala Ala Ala Ala Val Ala Ala Ala Pro Ala Ala Gly Gly Ala
         35                  40                  45

gcg gca gca gaa gaa aaa act gaa ttc gac gtt gta ctt aaa tct gca   192
Ala Ala Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Lys Ser Ala
     50                  55                  60

ggt gcg aac aaa gta gca gta att aaa gca gta cgt ggt gca act ggt   240
Gly Ala Asn Lys Val Ala Val Ile Lys Ala Val Arg Gly Ala Thr Gly
 65                  70                  75                  80

tta ggc tta aaa gaa gct aaa gat tta gtt gaa tct gct cca gct aac   288
Leu Gly Leu Lys Glu Ala Lys Asp Leu Val Glu Ser Ala Pro Ala Asn
                 85                  90                  95
```

```
tta aaa gaa ggc gtt tct aaa gaa gaa gct gaa gca ctt aag aaa gaa   336
Leu Lys Glu Gly Val Ser Lys Glu Glu Ala Glu Ala Leu Lys Lys Glu
            100                 105                 110

tta gaa gaa gcg ggt gca gaa gta gaa gtt aaa                     369
Leu Glu Glu Ala Gly Ala Glu Val Glu Val Lys
        115                 120
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<210> 2
<211> 123
<212> PRT
<213> Haemophilus influenzae

<400> 2

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Met Ser Leu Thr Asn Glu Gln Ile Ile Glu Ala Ile Ala Ser Lys Thr
  1               5                  10                  15

Val Thr Glu Ile Val Glu Leu Ile Ala Ala Met Glu Glu Lys Phe Gly
            20                  25                  30

Val Ser Ala Ala Ala Ala Val Ala Ala Ala Pro Ala Ala Gly Gly Ala
         35                  40                  45

Ala Ala Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Lys Ser Ala
     50                  55                  60

Gly Ala Asn Lys Val Ala Val Ile Lys Ala Val Arg Gly Ala Thr Gly
 65                  70                  75                  80

Leu Gly Leu Lys Glu Ala Lys Asp Leu Val Glu Ser Ala Pro Ala Asn
                85                  90                  95

Leu Lys Glu Gly Val Ser Lys Glu Glu Ala Glu Ala Leu Lys Lys Glu
            100                 105                 110

Leu Glu Glu Ala Gly Ala Glu Val Glu Val Lys
        115                 120
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<210> 3
<211> 375
<212> DNA
<213> Helicobacter pylori

<220>
<221> CDS
<222> (1)..(375)

<400> 3

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atg gca att tca aaa gaa gaa gtg tta gag tat att ggt tca ttg agc   48
Met Ala Ile Ser Lys Glu Glu Val Leu Glu Tyr Ile Gly Ser Leu Ser
  1               5                  10                  15

gtt tta gag ctt tct gaa ttg gtt aaa atg ttt gag gaa aaa ttt ggc   96
Val Leu Glu Leu Ser Glu Leu Val Lys Met Phe Glu Glu Lys Phe Gly
            20                  25                  30
```

```
gtg agc gcg act cca acg gtc gta gcg ggt gcg gct gta gct ggc ggt   144
Val Ser Ala Thr Pro Thr Val Val Ala Gly Ala Ala Val Ala Gly Gly
         35                  40                  45

gca gcg gct gag agc gaa gaa aaa acc gaa ttt aat gtg att ttg gcc   192
Ala Ala Ala Glu Ser Glu Glu Lys Thr Glu Phe Asn Val Ile Leu Ala
     50                  55                  60

gat agc ggt gct gaa aaa att aag gtg att aaa gtg gtt cgt gaa atc   240
Asp Ser Gly Ala Glu Lys Ile Lys Val Ile Lys Val Val Arg Glu Ile
 65                  70                  75                  80

act gga ctt ggc ctg aaa gaa gct aaa gac gct acc gaa aaa acc cct   288
Thr Gly Leu Gly Leu Lys Glu Ala Lys Asp Ala Thr Glu Lys Thr Pro
                 85                  90                  95

cat gtg ctt aaa gag ggc gtg aat aaa gaa gaa gct gaa acc atc aag   336
His Val Leu Lys Glu Gly Val Asn Lys Glu Glu Ala Glu Thr Ile Lys
            100                 105                 110

aag aaa ctt gaa gaa gta ggc gct aag gtt gaa gtc aag               375
Lys Lys Leu Glu Glu Val Gly Ala Lys Val Glu Val Lys
        115                 120                 125
```

<210> 4
<211> 125
<212> PRT
<213> Helicobacter pylori

<400> 4

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Met Ala Ile Ser Lys Glu Glu Val Leu Glu Tyr Ile Gly Ser Leu Ser
  1               5                  10                  15

Val Leu Glu Leu Ser Glu Leu Val Lys Met Phe Glu Glu Lys Phe Gly
            20                  25                  30

Val Ser Ala Thr Pro Thr Val Val Ala Gly Ala Ala Val Ala Gly Gly
        35                  40                  45

Ala Ala Ala Glu Ser Glu Glu Lys Thr Glu Phe Asn Val Ile Leu Ala
    50                  55                  60

Asp Ser Gly Ala Glu Lys Ile Lys Val Ile Lys Val Val Arg Glu Ile
65                  70                  75                  80

Thr Gly Leu Gly Leu Lys Glu Ala Lys Asp Ala Thr Glu Lys Thr Pro
                85                  90                  95

His Val Leu Lys Glu Gly Val Asn Lys Glu Glu Ala Glu Thr Ile Lys
            100                 105                 110

Lys Lys Leu Glu Glu Val Gly Ala Lys Val Glu Val Lys
        115                 120                 125
```

<210> 5
<211> 366

<212> DNA
<213> Streptococcus pneumoniae

<220>
<221> CDS
<222> (1)..(366)

<400> 5
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atg gca ttg aac att gaa aac att att gct gaa att aaa gaa gct tca   48
Met Ala Leu Asn Ile Glu Asn Ile Ile Ala Glu Ile Lys Glu Ala Ser
  1               5                  10                  15

atc ctt gaa ttg aac gac ctt gta aaa gct atc gaa gaa gaa ttt ggt   96
Ile Leu Glu Leu Asn Asp Leu Val Lys Ala Ile Glu Glu Glu Phe Gly
             20                  25                  30

gta act gca gct gct cct gta gct gtt gct gca gct gat gca gct gat   144
Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Asp Ala Ala Asp
         35                  40                  45

gct ggt gct gct aaa gat tca ttc gac gtt gaa ttg aca tct gca ggc   192
Ala Gly Ala Ala Lys Asp Ser Phe Asp Val Glu Leu Thr Ser Ala Gly
     50                  55                  60

gac aaa aaa gtt ggc gtt atc aaa gtt gta cgt gaa atc act ggt ctt   240
Asp Lys Lys Val Gly Val Ile Lys Val Val Arg Glu Ile Thr Gly Leu
 65                  70                  75                  80

ggt ctt aaa gaa gct aaa gaa ctt gtt gac ggt gca cca gca ctt gtt   288
Gly Leu Lys Glu Ala Lys Glu Leu Val Asp Gly Ala Pro Ala Leu Val
                 85                  90                  95

aaa gaa ggc gtt gca act gca gaa gct gaa gaa atc aaa gct aaa ttg   336
Lys Glu Gly Val Ala Thr Ala Glu Ala Glu Glu Ile Lys Ala Lys Leu
            100                 105                 110

gaa gaa gct gga gct tca gtt act ctt aaa                          366
Glu Glu Ala Gly Ala Ser Val Thr Leu Lys
        115                 120
```

<210> 6
<211> 122
<212> PRT
<213> Streptococcus pneumoniae

<400> 6
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Met Ala Leu Asn Ile Glu Asn Ile Ile Ala Glu Ile Lys Glu Ala Ser
  1               5                  10                  15

Ile Leu Glu Leu Asn Asp Leu Val Lys Ala Ile Glu Glu Glu Phe Gly
             20                  25                  30

Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Asp Ala Ala Asp
         35                  40                  45

Ala Gly Ala Ala Lys Asp Ser Phe Asp Val Glu Leu Thr Ser Ala Gly
     50                  55                  60
```

```
Asp Lys Lys Val Gly Val Ile Lys Val Val Arg Glu Ile Thr Gly Leu
 65                  70                  75                  80

Gly Leu Lys Glu Ala Lys Glu Leu Val Asp Gly Ala Pro Ala Leu Val
                 85                  90                  95

Lys Glu Gly Val Ala Thr Ala Glu Ala Glu Glu Ile Lys Ala Lys Leu
            100                 105                 110

Glu Glu Ala Gly Ala Ser Val Thr Leu Lys
        115                 120
```

<210> 7
<211> 369
<212> DNA
<213> Neisseria gonorrhoeae

<220>
<221> CDS
<222> (1)..(369)

<400> 7

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atg gct att act aaa gaa gac att ttg gaa gca gtt ggt tct ttg acc   48
Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
  1               5                  10                  15

gta atg gaa ttg aat gac ctg gtt aaa gct ttt gaa gaa aaa ttc ggt   96
Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
             20                  25                  30

gtt tct gct gct gct gtt gca gtt gca ggt cct gct ggt gcc ggt gct   144
Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
         35                  40                  45

gcc gat gct gaa gaa aaa acc gaa ttt gat gtc gtt ttg gct tct gcc   192
Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
     50                  55                  60

ggc gat caa aaa gtc ggc gtg att aaa gtt gtc cgt gca att act ggt   240
Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
 65                  70                  75                  80

ttg ggt ctg aaa gaa gct aaa gac atc gtt gac ggc gca cct aaa acc   288
Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
                 85                  90                  95

att aaa gag ggt gtt tct aaa gct gaa gcc gaa gac atc caa aaa caa   336
Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
            100                 105                 110

ctg gaa gca gca ggc gct aaa gtc gaa atc aaa                      369
Leu Glu Ala Ala Gly Ala Lys Val Glu Ile Lys
        115                 120
```

<210> 8
<211> 123
<212> PRT
<213> Neisseria gonorrhoeae

<400> 8
Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
1 5 10 15

Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
20 25 30

Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
35 40 45

Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
50 55 60

Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
65 70 75 80

Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
85 90 95

Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
100 105 110

Leu Glu Ala Ala Gly Ala Lys Val Glu Ile Lys
115 120

<210> 9
<211> 369
<212> DNA
<213> Neisseria meningitidis

<220>
<221> CDS
<222> (1)..(369)

<400> 9
atg gct att act aaa gaa gac att ttg gaa gca gtt ggt tct ttg acc 48
Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
1 5 10 15

gta atg gaa ttg aac gac ttg gtt aaa gct ttt gaa gaa aaa ttc ggt 96
Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
20 25 30

gtt tct gct gct gct gtt gca gtt gca ggt cct gct ggt gcc ggt gct 144
Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
35 40 45

gcc gat gct gaa gaa aaa acc gaa ttt gat gtc gtt ttg gct tct gcc 192
Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
50 55 60

```
ggt gat caa aaa gtc ggc gtg att aaa gtt gtc cgt gca att acc ggt   240
Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
 65                  70                  75                  80

ttg ggt ctg aaa gaa gct aaa gac atc gtt gac ggt gca cct aaa acc   288
Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
                 85                  90                  95

att aaa gag ggt gtt tct aaa gct gaa gcc gaa gac atc caa aaa caa   336
Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
            100                 105                 110

ctg gaa gaa gcc ggc gct aaa gtc gaa atc aaa                      369
Leu Glu Glu Ala Gly Ala Lys Val Glu Ile Lys
        115                 120
```

<210> 10
<211> 123
<212> PRT
<213> Neisseria meningitidis

<400> 10

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Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
  1               5                  10                  15

Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
             20                  25                  30

Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
         35                  40                  45

Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
     50                  55                  60

Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
 65                  70                  75                  80

Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
                 85                  90                  95

Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
            100                 105                 110

Leu Glu Glu Ala Gly Ala Lys Val Glu Ile Lys
        115                 120
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<210> 11
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 11
gtaaggatcc atgtcattaa ctaacgaaca a 31

<210> 12
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 12
agcatctcga gatttaactt ctacttctgc accc 34

<210> 13
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 13
ggaaggatcc atggcattga acattgaaaa cat 33

<210> 14
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 14
tactctcgag tttaagagta actgaagctc cag 33

<210> 15
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 15
gtaaggatcc atggctatta ctaaagaaga c 31

<210> 16
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 16
agcatctcga gatttgattt cgactttagc gcct 34

<210> 17
<211> 369
<212> DNA
<213> Haemophilus influenzae

<220>
<221> CDS
<222> (1)..(369)

<400> 17
atg tca tta act aac gaa caa atc att gaa gcg att gct tca aaa act 48
Met Ser Leu Thr Asn Glu Gln Ile Ile Glu Ala Ile Ala Ser Lys Thr
1 5 10 15

gta act gaa atc gtt gaa tta atc gca gcg atg gaa gaa aaa ttc ggt 96
Val Thr Glu Ile Val Glu Leu Ile Ala Ala Met Glu Glu Lys Phe Gly
20 25 30

gtt tca gca gcg gca gca gta gca gca gct cca gca gca ggc ggt gca 144
Val Ser Ala Ala Ala Ala Val Ala Ala Ala Pro Ala Ala Gly Gly Ala
35 40 45

gcg gca gca gaa gaa aaa act gaa ttc gac gtt gta ctt aaa tct gca 192
Ala Ala Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Lys Ser Ala
50 55 60

ggt gcg aac aaa gta gca gta att aaa gca gta cgt ggt gca act ggt 240
Gly Ala Asn Lys Val Ala Val Ile Lys Ala Val Arg Gly Ala Thr Gly
65 70 75 80

tta ggc tta aaa gaa gct aaa gat tta gtt gaa tct gct cca gct aac 288
Leu Gly Leu Lys Glu Ala Lys Asp Leu Val Glu Ser Ala Pro Ala Asn
85 90 95

tta aaa gaa ggc gtt tct aaa gaa gaa gct gaa gca ctt aag aaa gaa 336
Leu Lys Glu Gly Val Ser Lys Glu Glu Ala Glu Ala Leu Lys Lys Glu
100 105 110

tta gaa gaa gcg ggt gca gaa gta gaa gtt aaa 369
Leu Glu Glu Ala Gly Ala Glu Val Glu Val Lys
115 120

<210> 18
<211> 123
<212> PRT
<213> Haemophilus influenzae

<400> 18
Met Ser Leu Thr Asn Glu Gln Ile Ile Glu Ala Ile Ala Ser Lys Thr
1 5 10 15

Val Thr Glu Ile Val Glu Leu Ile Ala Ala Met Glu Glu Lys Phe Gly
20 25 30

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Val Ser Ala Ala Ala Ala Val Ala Ala Ala Pro Ala Ala Gly Gly Ala
         35                  40                  45

Ala Ala Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Lys Ser Ala
     50                  55                  60

Gly Ala Asn Lys Val Ala Val Ile Lys Ala Val Arg Gly Ala Thr Gly
 65                  70                  75                  80

Leu Gly Leu Lys Glu Ala Lys Asp Leu Val Glu Ser Ala Pro Ala Asn
                 85                  90                  95

Leu Lys Glu Gly Val Ser Lys Glu Glu Ala Glu Ala Leu Lys Lys Glu
            100                 105                 110

Leu Glu Glu Ala Gly Ala Glu Val Glu Val Lys
        115                 120
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<210> 19
<211> 366
<212> DNA
<213> Streptococcus pneumoniae

<220>
<221> CDS
<222> (1)..(366)

<400> 19

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atg gca ttg aac att gaa aac att att gct gaa att aaa gaa gct tca   48
Met Ala Leu Asn Ile Glu Asn Ile Ile Ala Glu Ile Lys Glu Ala Ser
  1               5                  10                  15

atc ctt gaa ttg aac gac ctt gta aaa gct atc gaa gaa gaa ttt ggt   96
Ile Leu Glu Leu Asn Asp Leu Val Lys Ala Ile Glu Glu Glu Phe Gly
             20                  25                  30

gta act gca gct gct cct gta gct gtt gct gca gct gat gca gct gat   144
Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Asp Ala Ala Asp
         35                  40                  45

gct ggt gct gct aaa gat tca ttc gac gtt gaa ttg aca tct gca ggc   192
Ala Gly Ala Ala Lys Asp Ser Phe Asp Val Glu Leu Thr Ser Ala Gly
     50                  55                  60

gac aaa aaa gtt ggc gtt atc aaa gtt gta cgt gaa atc act ggt ctt   240
Asp Lys Lys Val Gly Val Ile Lys Val Val Arg Glu Ile Thr Gly Leu
 65                  70                  75                  80

ggt ctt aaa gaa gct aaa gaa ctt gtt gac ggt gca cca gca ctt gtt   288
Gly Leu Lys Glu Ala Lys Glu Leu Val Asp Gly Ala Pro Ala Leu Val
                 85                  90                  95

aaa gaa ggc gtt gca act gca gaa gct gaa gaa atc aaa gct aaa ttg   336
Lys Glu Gly Val Ala Thr Ala Glu Ala Glu Glu Ile Lys Ala Lys Leu
            100                 105                 110
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```
gaa gaa gct gga gct tca gtt act ctt aaa                                  366
Glu Glu Ala Gly Ala Ser Val Thr Leu Lys
        115                 120


<210> 20
<211> 122
<212> PRT
<213> Streptococcus pneumoniae

<400> 20
Met Ala Leu Asn Ile Glu Asn Ile Ile Ala Glu Ile Lys Glu Ala Ser
  1               5                  10                  15

Ile Leu Glu Leu Asn Asp Leu Val Lys Ala Ile Glu Glu Glu Phe Gly
             20                  25                  30

Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Asp Ala Ala Asp
         35                  40                  45

Ala Gly Ala Ala Lys Asp Ser Phe Asp Val Glu Leu Thr Ser Ala Gly
     50                  55                  60

Asp Lys Lys Val Gly Val Ile Lys Val Val Arg Glu Ile Thr Gly Leu
 65                  70                  75                  80

Gly Leu Lys Glu Ala Lys Glu Leu Val Asp Gly Ala Pro Ala Leu Val
                 85                  90                  95

Lys Glu Gly Val Ala Thr Ala Glu Ala Glu Glu Ile Lys Ala Lys Leu
            100                 105                 110

Glu Glu Ala Gly Ala Ser Val Thr Leu Lys
        115                 120


<210> 21
<211> 369
<212> DNA
<213> Neisseria gonorrhoeae

<220>
<221> CDS
<222> (1)..(369)

<400> 21
atg gct att act aaa gaa gac att ttg gaa gca gtt ggt tct ttg acc   48
Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
  1               5                  10                  15

gta atg gaa ttg aat gac ctg gtt aaa gct ttt gaa gaa aaa ttc ggt   96
Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
             20                  25                  30

gtt tct gct gct gct gtt gca gtt gca ggt cct gct ggt gcc ggt gct   144
Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
         35                  40                  45
```

```
gcc gat gct gaa gaa aaa acc gaa ttt gat gtc gtt ttg gct tct gcc   192
Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
     50                  55                  60

ggc gat caa aaa gtc ggc gtg att aaa gtt gtc cgt gca att act ggt   240
Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
 65                  70                  75                  80

ttg ggt ctg aaa gaa gct aaa gac atc gtt gac ggc gca cct aaa acc   288
Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
                 85                  90                  95

att aaa gag ggt gtt tct aaa gct gaa gcc gaa gac atc caa aaa caa   336
Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
            100                 105                 110

ctg gaa gca gca ggc gct aaa gtc gaa atc aaa                      369
Leu Glu Ala Ala Gly Ala Lys Val Glu Ile Lys
        115                 120
```

<210> 22
<211> 123
<212> PRT
<213> Neisseria gonorrhoeae

<400> 22

```
Met Ala Ile Thr Lys Glu Asp Ile Leu Glu Ala Val Gly Ser Leu Thr
  1               5                  10                  15

Val Met Glu Leu Asn Asp Leu Val Lys Ala Phe Glu Glu Lys Phe Gly
             20                  25                  30

Val Ser Ala Ala Ala Val Ala Val Ala Gly Pro Ala Gly Ala Gly Ala
         35                  40                  45

Ala Asp Ala Glu Glu Lys Thr Glu Phe Asp Val Val Leu Ala Ser Ala
     50                  55                  60

Gly Asp Gln Lys Val Gly Val Ile Lys Val Val Arg Ala Ile Thr Gly
 65                  70                  75                  80

Leu Gly Leu Lys Glu Ala Lys Asp Ile Val Asp Gly Ala Pro Lys Thr
                 85                  90                  95

Ile Lys Glu Gly Val Ser Lys Ala Glu Ala Glu Asp Ile Gln Lys Gln
            100                 105                 110

Leu Glu Ala Ala Gly Ala Lys Val Glu Ile Lys
        115                 120
```